



WATER RESOURCES STRATEGY IMPLEMENTATION

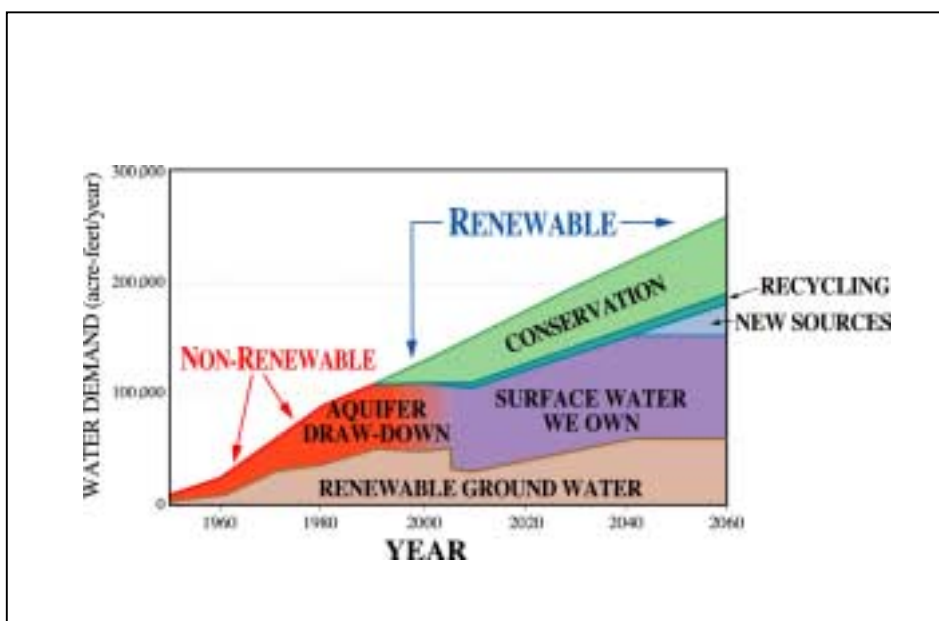
FREQUENTLY ASKED QUESTIONS: WATER QUANTITY ISSUES

Why do we need a new Water Resources Strategy?

From about 1950 until our new Water Resources Strategy was adopted by the Mayor and Council in 1997, we had a single strategy: Pump water from the aquifer beneath us, knowing that water would seep from the Rio Grande to refill the aquifer quickly. Major declines in the water table—much more than 150 feet in many places—showed that the river was NOT refilling the aquifer as formerly believed. Today, about half the water we pump from the aquifer is not replenished. We are continuing to draw down the water table further and further.

Over the long term, this over-pumping or "mining" of the aquifer would cause permanent damage to the aquifer and to areas like the bosque, which rely on the ground water table. The land itself could sink, breaking up pipelines, roads and buildings with its movement.

The new Water Strategy is designed to move Albuquerque to a sustainable supply, so that we protect the aquifer for use into the distant future and use the renewable water supplies we own.



How much water do Albuquerque customers use?

Customers use about 110,000 acre-feet of water a year, all provided by the aquifer that lies underground. We must both conserve and begin using river water we own from the San Juan-Chama Diversion Project that is brought to us through the Rio Grande so that our consumption comes from renewable supplies.

I thought the Conservation Program was a big success. Why do we need to use river water in addition to conserving?

The Conservation Program is on track for meeting our goal of reducing per-person use by 30 percent in the decade between 1994 and 2004. Water utility customers have cut their use by

WATER RESOURCES STRATEGY IMPLEMENTATION



about 23 percent, which adds up to about 20,000 acre-feet of water a year. We must continue so that we fully achieve the goal.

But even if we meet the goal, we will be consuming far more than the aquifer can provide on a sustainable basis. Only by adding other sources of water can we reduce our pumping from the aquifer to the sustainable level of an average of around 60,000 acre-feet per year.

Can we conserve even more?

Yes. We have not reached our goal of reducing use by 30% per person. Each year, the utility seeks additional conservation measures and repeats its conservation message. After we meet the 30% goal, we will keep pursuing conservation. However, we would have to cut use in half to eliminate the need for using our San Juan-Chama water.

If the City water utility owns 47,000 acre-feet of San Juan-Chama water, why is it planning to take 94,000 acre-feet of water out of the river?

The City purchased water rights for 48,200 acre-feet of San-Juan Chama water. 1,200 acre-feet are lost in transit, leaving 47,000 acre-feet available. The laws governing our San Juan-Chama water require that it be put to "*beneficial consumptive use*." "Consumptive use" means the water is no longer available for other uses. Uses that leave the water available to be reclaimed and recycled are not consumptive uses.

About half the water delivered to customers is consumptively used—the other half returns through the sewer system to the Southside Water Reclamation Plant where it is cleaned and returned to the Rio Grande. So to put 47,000 acre-feet of San Juan-Chama water to "consumptive use" we must take twice as much (94,000 acre-feet) from the river. 47,000 acre-feet will return to the Rio Grande as reclaimed water for in-stream and other uses.

Failing to make beneficial consumptive use of San Juan-Chama water places our ownership of it in jeopardy and would violate the Colorado River Compact (a federal law). We have invested \$40 million in this vital renewable water supply and must protect our ownership.

What will happen to the river between the point where 94,000 acre-feet is withdrawn and 47,000 acre-feet is returned?

Surprisingly, studies now being completed are showing that the effect will be very small. Two basic factors make this so:

- Today we are already "borrowing" about 60,000 acre-feet/year from the river in the stretch that runs past Albuquerque. We do this by pumping 110,000 acre-feet of water from the aquifer, half of which is being replenished by river water. We don't notice the reduction in flow because it is not happening at a single point, but occurs gradually over several miles. We return about 55,000 acre-feet of water to the river in the form of reclaimed (cleaned) wastewater. For now, the 5,000 acre-foot deficit is made up for by the 23,000 acre-feet of Rio Grande water rights the City owns. When we add our San Juan-Chama water *AND* reduce pumping to a sustainable amount less water will leave the river to recharge the aquifer. Thus, the net change is minor.
- Even without the compensating reduction in river-to-aquifer water, the additional 47,000 acre-feet of water that the water utility "borrows" in this stretch of the river, is less than 5 percent of the river's flow of 1.1 million acre-feet of flow past Albuquerque. For example, in

WATER RESOURCES STRATEGY IMPLEMENTATION



October, when flow is traditionally lowest, this would amount to *about ONE TO TWO INCHES* of river depth. When flows are very low, the utility will reduce or eliminate withdrawals altogether and rely on ground water supplies alone until flow is higher.

The flow may not be altered much on an average basis, but what about during dry years when even a small amount of flow makes a big difference?

If we protect and preserve the aquifer, we will be able to stop withdrawals from the river during drought periods and revert to use of ground water alone until the drought ends. This is why maintaining a drought reserve is so critical: Even if we held more water rights to river water, river water will not be available during the severe droughts that our area periodically has.

The Strategy also calls for using a technology called aquifer storage/recovery once the water purification plant is in service. This would enable the water utility to take more water from the river when flow is high, purify it, and store it underground until it is needed to meet peaks in demand or during a drought.

Doesn't the river need to be full to preserve habitat for the silvery minnow?

The silvery minnow needs the habitat provided by shallow, slow-moving water. When the Rio Grande was in its natural state, many side-channels and backwaters provided this habitat.

Over the past 70 years, levees and other facilities have been built to channel the river's flow, thereby eliminating much of the minnow's habitat. The City is working with other organizations to analyze the habitat needed for the minnow to survive (see below). Just adding water will not solve the problem. In fact, making the river flow faster as it does when it is "full"— can actually endanger the silvery minnow.

What about the bosque?

The greatest peril to the bosque is a declining water table. Ground-water levels are declining because we—and our neighbors who use the same aquifer—are pumping more water than is being replenished. Using our San Juan-Chama water as part of our water supply means we can stop over-pumping so that we can maintain ground-water levels.

For a stretch of 78 miles of the Rio Chama and 76 miles of the Rio Grande upstream of Albuquerque, our San Juan-Chama water is adding to the native flow, which should very slightly improve the riparian habitat. We may also have the potential to create artificial flooding of the bosque or engage in other techniques that benefit this precious resource.

What is the water utility doing to protect the silvery minnow and the river?

Many important measures have been taken:

- ◆ Since 1996, the water utility has made nearly 200,000 acre-feet of the City's San Juan-Chama Project water available to supplement irrigation supplies to keep native water in the River during low-flow periods.
- ◆ The Biopark is hosting a major silvery minnow breeding program and a new experimental habitat to study what conditions the minnow needs. Each year tens of thousands of silvery minnows are raised and released into the river. This program is being undertaken by a group of agencies that are all concerned about the minnow and the river.

WATER RESOURCES STRATEGY IMPLEMENTATION



- ◆ The Biopark is hosting a reconstruction of the habitat most preferred by the Silvery Minnow. This “refugium” will contain shallow pools, a sandy bottom surface, and a controlled current. Silvery minnows will be hatched, studied and released at this in-river habitat.
- ◆ The water utility has worked with others to develop and implement a Silvery Minnow Recovery Plan, a multi-agency "white paper" which sets out a variety of strategies for future water management, especially during drought.
- ◆ The water utility has taken a lead role in formulating the Rio Grande Endangered Species Act Collaborative Program. The Program provides a framework for coordinated action to enhance habitat and contribute to the recovery of silvery minnow and the Southwestern willow flycatcher, which is also endangered.
- ◆ An “overbank” project would focus bosque rehabilitation on sample areas for controlled flooding and other improvements including:
 - Removal of non-native trees and underbrush species that lower the water table and crowd out cottonwoods
 - Planting native species
 - Removing trash, debris and excess underbrush that increase fire hazards
 - Establishing groundwater monitoring wells to track underground water availability

If water is not available from the river year around or during a drought, what supplies will be available then?

The aquifer that now supplies all our water will be the *only* secure and available source of water during a severe drought. We must protect and preserve the aquifer.

This means we must fully implement the Ground-water Protection Policy and Action Plan adopted by Albuquerque and Bernalillo County in 1994, *AND* we must stop pumping twice as much water out of the aquifer each year as can be replenished.

If we stopped growing right now, wouldn't we have enough water?

Unfortunately, no. Here are the reasons why:

- We are pumping about twice as much as is replenished right now. If we do this over the long term, portions of the aquifer will collapse and lose their ability to hold water, the land surface will subside, and our water quality will decline as we pump from deeper and deeper.
- Even if we could stop people who already live here from having children (which account for about 75 percent of our growth) and prevent even one more person from moving into the service area, the demands on the aquifer will continue to grow. Many other growing communities in the Middle Rio Grande Valley use the same aquifer we do. They will continue to pump from the aquifer (some have no other source of water). Even communities that lie outside the area underlain by the aquifer are beginning to look to our aquifer water as a potential source.

WATER RESOURCES STRATEGY IMPLEMENTATION



IF YOU HAVE QUESTIONS ABOUT THE WATER RESOURCES STRATEGY, WRITE TO

Water Resources Division

City Of Albuquerque,

PO Box 1293, Albuquerque NM 87103

CALL THE INFO LINE: 768-2562

OR CHECK OUT OUR WEB PAGE: www.cabq.gov/waterresources

*This informational material is provided by the Water Resources Division of the City of Albuquerque
Department of Public Works.*

8/01